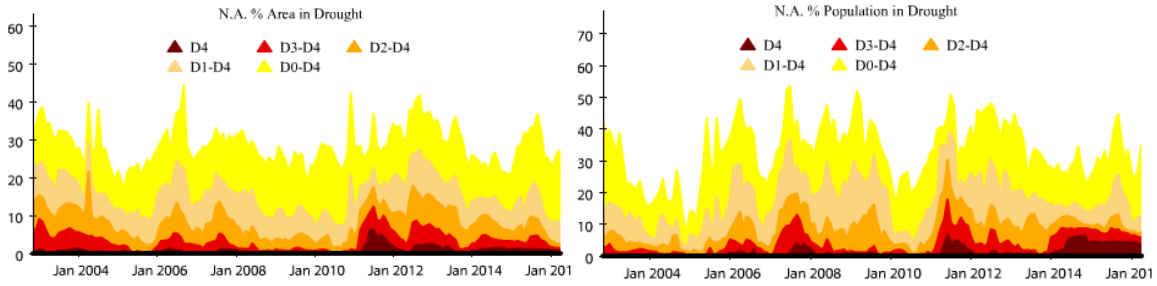
North American Drought Monitor – April 2016

At the end of April 2016, moderate to exceptional drought (D1-D4) affected approximately 8.4% of the area and 12.3% of the population of North America. These percentages are a decrease of 0.1% for area and an increase of 0.1% for population compared to the values for the end of March 2016.



CANADA: pending

UNITED STATES: A mid-April pattern change brought much-needed precipitation to the Great Plains and gradually pushed warm, showery weather into the Midwestern and Mid-Atlantic States. Precipitation across the central and southern Plains reversed a short-term drying trend and put an end to a spate of wildfires and episodes of blowing dust.

On the strength of the mid- to late-month storminess, above-average precipitation dominated the nation's mid-section. Excessive rain fell, however, in parts of the western Gulf Coast region. Wetness extended as far east as the lower Mississippi Valley. In contrast, short-term dryness intensified for much of April across the Mid-Atlantic region and environs, though late-month rainfall began to boost topsoil moisture.

Elsewhere, periodic April showers affected parts of the western U.S., although warm, dry conditions dominated the Pacific Northwest. The Northwestern drying trend followed a very wet winter, helping to minimize impacts. Farther south, late-season storms provided additional drought relief and delivered high-elevation snow, with some of the heaviest precipitation occurring across the Great Basin, central Rockies, and northern Intermountain West.

During the 4-week period ending on May 3, 2016, contiguous U.S. drought coverage decreased to 14.56%—down 2.15 percentage points. Since reaching a 5½-year minimum of 12.41% on March 15, drought coverage rose to 17.75% of the Lower 48 states on April 12 before falling back to the May 3 coverage of 14.56%. Most of the increase and subsequent decrease in drought coverage was related to the development of short-term drought in parts of the central U.S., followed by wetter weather starting in mid-April. During April, there was also some further erosion of drought from northern California to the northern Intermountain West.

Northern California continued to experience incremental improvement from long-term drought, while southern California entered a fifth year of drought. On May 3, nearly 90% of California remained in drought, down from 97% as recently as March 8. However, California's coverage of exceptional drought (D4) has fallen from 46 to 21% since October 1, 2015. Farther north, drought in Idaho and Washington has been eradicated since October 1—down from 86 and 100%, respectively.

Outside of the mainland U.S., coverage of abnormal dryness (D0) in Alaska increased slightly during April from 16 to 23%. Unusual warmth has dominated Alaska for many months, and some areas are contending with below-average snowpack. Meanwhile, Hawaiian rainfall was heavy enough in windward locations to result in a decrease in drought coverage (from 79 to 61%) between April 5 and May 3. Hawaii's drought coverage, which peaked at 79% on April 5 and 12, marked the Aloha State's greatest coverage since March 2, 2010—at the tail end of the previous El Niño. Elsewhere, Puerto Rico's drought situation continued to improve under a generally wet weather regime, with coverage decreasing from 18 to 5% during April.

Historical Perspective: According to preliminary information provided by the National Centers for Environmental Information, the contiguous U.S. experienced its 18th-warmest, 21st-wettest April during the 122-year period of record. The nation's average temperature of 53.2°F was 2.2°F above the 1901-2000 mean, while precipitation averaged 2.95 inches (117 percent of normal). It was the nation's wettest April since 2011.

In fact, April precipitation ranked among the ten highest values on record in each of the Plains States from North Dakota to Texas. With an average of 5.41 inches (137.4 mm) of precipitation—216 percent of normal—Kansas experienced its second-wettest April behind 7.02 inches (178.3 mm) in 1944. In contrast, it was the 22nd-driest April on record in Washington, and among the twenty driest in Maryland, New Jersey, and Virginia. Meanwhile, near- to above-normal temperatures dominated much of the nation, with state rankings ranging from the 35th-coolest April in New York to the second-warmest April—behind only 1934—in Idaho, Oregon, and Washington.

Agricultural and Hydrological Highlights: By May 3, just 3% of the U.S. winter wheat production area was affected by drought, down from 19% on April 12. Based conditions reported by the U.S. Department of Agriculture (USDA) for May 1, the U.S. winter wheat crop was rated 61% good to excellent and 7% very poor to poor. A year ago, when 37% of the wheat production area was in drought, the crop was rated just 43% good to excellent and 20% very poor to poor. During the last two decades, only 1998, 1999, 2005, and 2010 featured higher early-May crop ratings for U.S. winter wheat.

On May 3, drought was affecting just 10% of the U.S. cattle inventory, down from an April 12 peak of 19%. Similarly, only 8% of the nation's hay area was in drought, down from an April 12 peak of 12%. With the year's first USDA condition rating on May 1, U.S. rangeland and pastures started 2016 in the fifth-best condition during the 22-year period of record—rated as 58% good to excellent and just 10% very poor to poor. Conditions were better to start the year in 1995, 1998, 1999, and 2010; all but 1999 featured El Niño in progress as the year began.

The nation's corn and soybean production areas remained mostly free of drought, with less than 1% drought coverage for both commodities on May 3. Despite widespread showers in late April, 45% of the intended U.S. corn acreage had been planted by May 1, well ahead of the 5-year average of 30%. Soybean planting was also ahead of schedule: 8% complete by May 1, compared to the 5-year average of 6%.

On May 1, 2016, reservoir storage as a percent of average for the date was significantly below average in several Southwestern States. Specifically, statewide storage was just over one-half of the historical average for this time of year in Nevada and remained less than 75 percent of average in Arizona and New Mexico. Meanwhile in northern California, gradual recovery from long-term drought was apparent in statewide reservoir storage. However, California's recovery was uneven, with a general trend toward lower storage (and drought persistence) in southern watersheds. By the end of April, California's surface water storage was 89% of the historic average for the date, compared with 52% on November 30, 2015. Storage in California's intrastate reservoirs more than doubled during the 5-month period ending April 30.

MÉXICO: According to 1941-2016 rainfall statistics from the Mexican Weather Service, Mexico experienced close to normal conditions in April 2016 (37th wettest or 40th driest) with 17.1 mm of precipitation (1.7 mm below the long-term mean). Above-normal rains were distributed in the northeast, central-east and southeast areas. Most of the rains fell between 17 to 23 April and were caused by the No. 57 cold front (SMN numbering), a trough line from the northeast to the south, and Pacific moisture carried by the jet stream. In northern and northwest Mexico, stable atmospheric conditions prevailed with low rainfall, influenced by the North Pacific High. In south and southeast Mexico, the weather was influenced by an anticyclonic system in low and middle levels, combined with the Bermuda High's shifting away to the central Atlantic. All of these conditions contributed to the fourth warmest April since 1971 for the country, with mean temperature 23.0 °C which is 1.1 °C above the 1981-2010 average.

As of April 30 this year, 60.1% of the country was free of drought, 2.6% less than the previous month, while moderate to extreme drought (D1-D3) increased 3.8% to cover 14.3% of the country. The largest drought areas were in the north-west, east and south parts of the country.

In northern and northwest Mexico, low rainfall and above normal temperatures helped to increase moderate drought in Sonora from 25.9% to 57.1% and in Chihuahua (6th warmest April) from 2.8% to 15.4%. However, thanks to showers from 6 to 11 April, Baja California's percent area in moderate to extreme drought (D1-D3) saw a light improvement, falling from 52.6% to 50.4%; this state also had their 3rd warmest April. In the west, an increase from 49.6% to 73.1% was noted in Sinaloa's D0 classification, following by light increases in moderate drought (from 6.4% to 8.4%). D0 developed in Jalisco State, reaching 17.7% by the end of April.

In spite of rains in central-east Mexico, high temperatures prevented the recovery of drought areas; coverage of moderate to severe drought (D1-D2) increased from 23.9% to 39% in Veracruz, from 4.7% to 10.2% in Puebla (8th warmest April), and from 20.9% to 21.8% in Hidalgo (3rd warmest April). In the southeast, moderate drought developed to cover 12% of Tabasco, with 59.2% abnormally dry. Major changes in D0 occurred in the Yucatan Peninsula, increasing from 14% to 34.3% in Campeche and from 36% to 49.7% in Yucatan.

Fortunately, the February-April 2015 rains in the south helped to improve long-term drought in Oaxaca, erasing extreme drought (D3) and contracting moderate drought from 21.7% to 0.6% of Guerrero. Other states benefiting from April's rains include Zacatecas, where D0 shrank from 27.4% to 1.4%, and Durango and Queretaro where D1 was reduced.

Springtime brought an increase in forest fires over the country, with around 99,076 hectares burning over the period from January 1 to May 5 2016, resulting in the seventh largest area burned. But nearly two-thirds of this (65,134 hectares) was burned in April, according to the CONAFOR (National Forestry Commission) weekly report. The main states with the largest area burned were Oaxaca, Michoacan, Jalisco, Puebla, Guerrero, State of Mexico, Zacatecas, Chiapas, Sonora and Durango.

The Information Service for Agro-Food and Fishing (SIAP) reported an emergency declaration by the Secretary of the Interior in six municipalities in central Veracruz due to severe (heavy) rain from April 18 – 22. Thanks to this, local authorities will provide resources to meet some needs such as food, shelter and health for the affected population. Local offices of SAGARPA (Secretary of Agriculture, Livestock, Rural Development, Fishing and Food) reported losses in agriculture mainly to drought, pests, strong winds and hail.

The SIAP also reported an increase of 2.1% compared to the last year over the production in main crops such as forage oat, red tomatoes, potatoes, green chili and corn for the Autumn-Winter season. The states with increased production were Sinaloa, Sonora, Guanajuato, Michoacan, Coahuila and Durango, thanks to favorable weather in the agricultural regions of these states. Sinaloa, Nayarit and Tamaulipas reported losses, due to frost, drought, excessive humidity and low temperatures, of about 45.2 thousands hectares affecting corn and sorghum grain and beans crops.